Euclid NPDES

US EPA Region V Specific Objection to
Phosphorus Limits

Regional Administrator Shore, Ohio EPA thanks you for your time this evening. Tonight, my legal team and staff from the Division of Surface Water will walk you through (what we believe) are strong legal, technical and policy arguments to withdraw this Specific Objection to our draft NPDES permit for Euclid.

Ohio has been a Clean Water Act delegated program for decades, and we take our role very seriously. This Specific Objection puts Ohio's credibility into question, and we plan to spend the next hour explaining why we think this was done in error. We also plan to explain our commitment to Lake Erie, particularly to address non-point source phosphorus loading that drives harmful algal bloom impairments.

If there is anything in our presentation tonight that spurs additional questions from you or your team, we remain open to scheduling additional time to discuss this further. I will turn first to Bill Fischbein, our legal representative…..

Thank you Director Stevenson and Regional Administrator Shore for your personal participation in tonight's hearing.

My name is Bill Fischbein, and I am the supervising attorney for Ohio EPA's Division of Surface Water.

Let me start by saying that the State of Ohio has a strong and ongoing commitment to addressing water quality impacts affecting Lake Erie. This is demonstrated by many actions taken by the State of Ohio including Ohio's Domestic Action Plan, Ohio EPA's efforts on the Maumee Far Field TMDL and Ohio's H2Ohio program.

All of these efforts are focused and aligned towards reducing Phosphorus levels going into Lake Erie in a meaningful, strategic and technically sound manner so that we can reduce harmful algal blooms and address impairments that we have listed in our 303d report.

However, there are serious legal, policy and technical concerns with US EPA's actions in objecting to Euclid's permit in an attempt to force lower Phosphorus limits in Euclid's. I will touch on the overarching legal points and others from Ohio EPA will touch on the policy and technical concerns.

There are three legal points that I would like to highlight.

US EPA's "Reasonable Potential" Analysis is a Mere Pretext to its True Policy Objective

Ohio's Legal Summary

True position as revealed by "settlement discussions" with the City and later confirmed to Ohio EPA is 0.5 mg/L for all major Lake Erie POTWs. The basis for the 0.5 mg/L standard was revealed to be the Great Lakes Water Quality Agreement, Annex 4 recommendations.

Confirms that US EPA's permit review process and second guessing of Ohio's reasonable potential analysis in this instance was merely a pretext to implement the policy initiative of an across-the-board phosphorus reduction for Lake Erie major POTWs.

First, the administrative record in this matter will clearly show that US EPA is predetermined to force lower phosphorus limits on not just Euclid but all major POTW's in Ohio's Lake Erie basin and has sought to justify the lowering of limits in any manner that it could. Ohio EPA permitting staff will discuss this in more detail in their remarks.
This is a significant legal flaw because it now appears that the entire basis for Region 5's objection in this matter was a mere pretext for justifying a policy objective rather than technical or legal problems with Ohio's reasonable potential analysis. We know this based on US EPA's discussions with City and later confirmed to Ohio regarding US EPA's willingness to settle the objection if the City would capitulate and agree to meet an effluent limit of 0.5 mg/L, a number that is orders of magnitude higher than what US EPA calculated in its own reasonable potential analysis. That course of action demonstrates the patently arbitrary and capricious nature Region 5's conduct in this matter.

Rulemaking without Notice and Comment

Ohio's Legal Summary

US EPA's initiative to require an across-the-board Phosphorus effluent limit of 0.5 mg/L is a substantive rule as it imposes significant obligations on a class of similarly situated dischargers in Ohio's Lake Erie Basin.

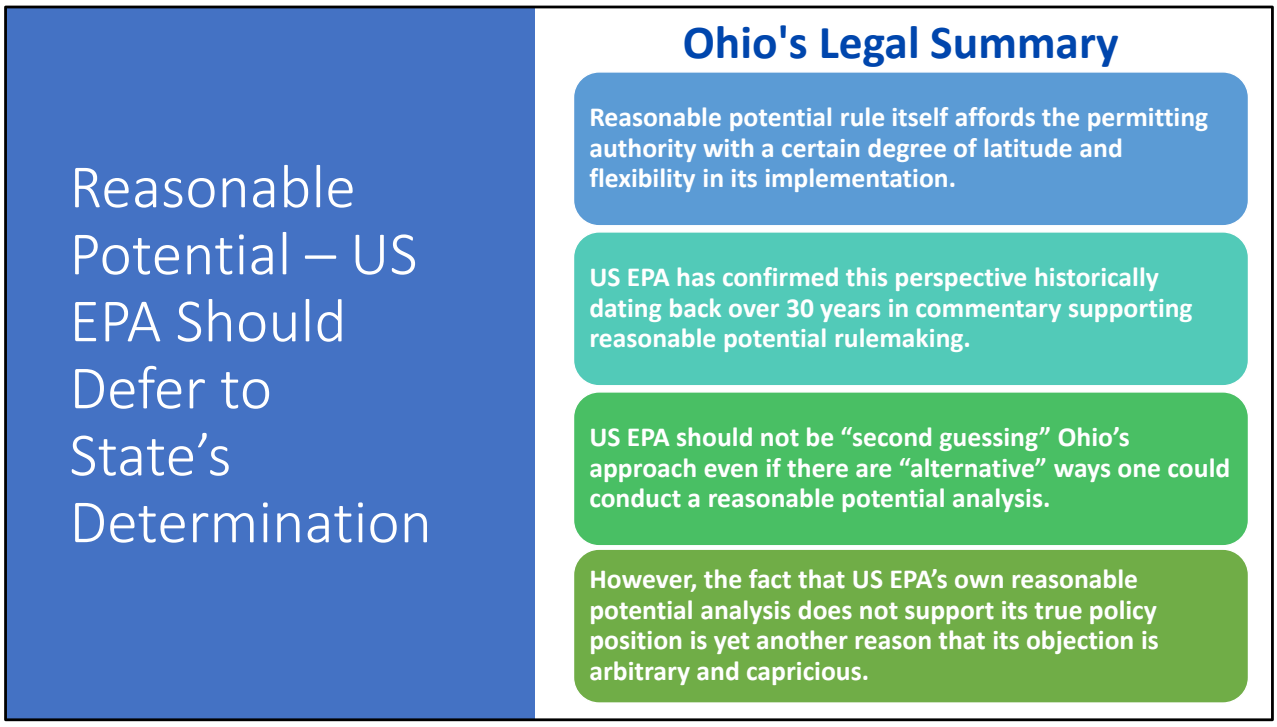
Before implementing this rulemaking, US EPA is required to conduct notice and comment rulemaking under 5 USC 553.

US EPA's failure to conduct notice and comment rulemaking in advance of this effort is unlawful.

Second, US EPA's initiative to require an across-the-board effluent limit of 0.5 mg/L Phosphorus is tantamount to a substantive rule as it imposes significant regulatory obligations on a class of similarly situated dischargers in Ohio's Lake Erie Basin in a uniform manner.

Before implementing a policy initiative like this, US EPA is required to conduct notice and comment rulemaking under the federal Administrative Procedure Act. 5 USC 553. It has not done so.

US EPA's failure to conduct said notice and comment rulemaking in advance of this effort renders it unlawful.



Last, notwithstanding the technical flaws and the concerns with how US EPA's conducted its "reasonable potential" analysis in its attempt to justify a lower effluent limit for phosphorus in Euclid's permit, the fact that US EPA even went there in the first place, is itself legally problematic.

The federal reasonable potential rule affords the permitting authority with a certain degree of deference and flexibility in its implementation. US EPA has confirmed this perspective historically dating back over 30 years in commentary supporting the reasonable potential rulemaking.

Accordingly, even if there are other ways to conduct a reasonable potential analysis, US EPA should defer to the state's analysis, especially where, as in the case at hand, US EPA has still failed to point out why Ohio's analysis is somehow incorrect.

Technical staff will discuss in great detail the flaws with US EPA's reasonable potential analysis but again, as a legal matter, US EPA should not be "second guessing" Ohio's approach.

Further, the fact that US EPA's own reasonable potential analysis does not support its true policy position is by definition arbitrary and capricious.

Conclusion

For these reasons, I would urge you to withdraw the objection and further urge that high-level discussions with both the Region, Headquarters, Ohio, and other affected parties be had regarding the policy and legal implications of your initiative.

History of Ohio Lake Erie Basin Phosphorus Limits

All major POTWs in the LEB are required to have a monthly average limit of 1.0 mg/L.

- Required by Ohio Administrative Code in Rule 3745-33-06

Facilities are also required through NPDES permits to optimize.

Ohio EPA cannot legally defend permit limits outside of a TMDL when further reductions would have a negligible impact.

Optimization has been successful. POTWs are achieving lower concentrations than the bare minimum that would be needed to comply with the 1.0 mg/L limit.

Ohio is not opposed to issuing permits with phosphorus limits less than 1.0 mg/L.

When evaluating the need for lower P limits Ohio evaluates:

- **Is there non-attainment attributed to elevated phosphorus concentrations?**
- **If so, would reductions by the point source move the needle on attainment?**

Several permits with limits of 0.5 mg/L and 0.7 mg/L.

Region 5 currently reviewing Plain City, which has a monthly average limit of 0.35 mg/L proposed.

Ohio is opposed to including lower phosphorus limits in permits when it will yield little to no environmental benefit.

History of Ohio Lake Erie Basin Phosphorus Limits

Region 5 began commenting on the limits of 1.0 mg/L for facilities that discharge directly to Lake Erie in early 2020 through comments on two of Ohio's permits on the real time review list.

Early 2020

Spring of 2020

That Spring, Ohio and Region 5 agreed to pause the reviews to allow technical staff to discuss phosphorus permit conditions.

History of Ohio Lake Erie Basin Phosphorus Limits

The technical workgroup met four times in the Spring of 2020.

During the meetings, Ohio EPA technical experts walked through Ohio's reasonable potential analysis for phosphorus.

Region 5 rejected the analysis because it did not result in lower limits, but to date has not provided specific scientific or legal feedback on Ohio's reasonable potential analysis.

Instead, Region 5 has provided suggestions on how to justify lower limits.

Region 5 Phosphorus Limit Suggestions

Beyond our permitting requirements and inconsistent with our scientific evaluation of Lake Erie Impairments

1. **International Joint Commission's numeric phosphorus targets of 0.15 mg/L (Western basin) and 0.10 mg/L (Central basin)**
2. **Cutting limits by 40% (0.6 mg/L)**
3. **Other states' numeric criteria**
4. **Inland lake's criteria**
5. **Technology based effluent limit of 0.5 mg/L**
6. **Limit of 0.5 mg/L from Annex 4 suggestion**

Further Discussion About 0.5 mg/L (TBEL)

- TBEL of 0.5 mg/L is inconsistent with Region 5's assertion that Euclid has reasonable potential and a WQBEL is required.
- TBELs are limits that represent what treatment technology can achieve.
- For existing facilities, could be based on an extensive evaluation of technology used.
- For new facilities, a TBEL could be defined in state or federal rule, but this has not been done.

Further Discussion About 0.5 mg/L - 2012 Great Lakes Water Quality Agreement (Annex 4)

1. the Parties shall assess and, **where necessary**, develop and implement regulatory and non-regulatory programs to reduce phosphorus loading from urban sources including:

(a) programs to prevent further degradation of the Waters of the Great Lakes from wastewater treatment plants located in the Great Lakes basin;

(b) programs to optimize existing wastewater treatment facilities;

(c) programs to ensure that construction and operation of municipal wastewater treatment facilities that discharge one million liquid gallons or more per day achieve a maximum effluent concentration of 1.0 milligram per litre total phosphorus for plants in the basins of Lakes Superior, Michigan, and Huron, **and of 0.5 milligram per litre total phosphorus for plants in the basins of Lakes Ontario and Erie;**

Further Discussion About 0.5 mg/L - 2012 Great Lakes Water Quality Agreement (Annex 4)

Ohio EPA assessed a limit of 0.5 mg/L and determined it was not necessary.

Euclid does not have reasonable potential for phosphorus.

A limit of 1.0 mg/L is consistent with Ohio's 2020 Domestic Action Plan.

- Emphasizes reductions for nonpoint sources
- Phosphorus optimization
- Wet weather work
- Western Lake Erie Basin far-field TMDL

What Phosphorus Limit is Appropriate for Euclid?

- Region 5 has **predetermined** that a limit lower than 1.0 mg/L is needed.
  - Regardless of the what the science is telling us.
  - Regardless that Euclid does not have reasonable potential.
  - Regardless of if the limit is legally defensible.

What Phosphorus Limit is Appropriate for Euclid?

The specific objection proposes for the facility to achieve a concentration of 0.007 mg/L. A concentration of 0.007 mg/L is not technically sound or legally justifiable.

- Would not result in a measurable change in Lake Erie.
- Achieving 0.007 mg/L is not technically feasible.
- Euclid just invested in a new plant.
- Any additional investment would be expensive and for little to no environmental impact.

Region 5 has approached Euclid and Ohio proposing a limit of 0.5 mg/L to settle the specific objection.

- Would not result in a meaningful reduction.
- Neither Ohio EPA nor Euclid knows what the new plant will be able to perform once it has been fully operating for some time.
- 0.5 mg/L would be a policy stance that we do not believe is legally or scientifically defensible.

What Phosphorus Limit is Appropriate for Euclid?

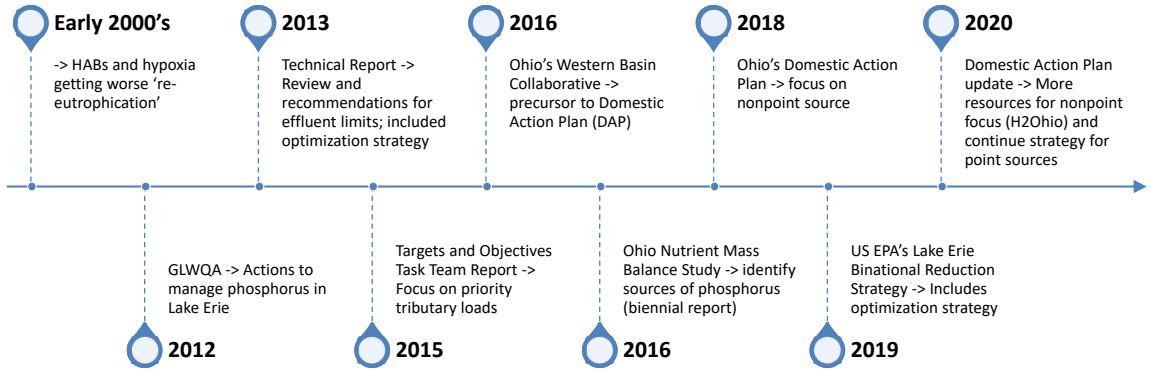
Ohio has determined that for this permit cycle, a monthly average limit of 1.0 mg/L with additional requirements to optimize treatment following recent upgrades is legal and appropriate.

Once Ohio has completed the WLEB TMDL, we will be looking to evaluate what Lake Erie impairments remain in Central Basin and will develop a TMDL specifically to address those.

NPDES TP reductions may or may not be needed to address impairments in the Central Basin.

- **Annex 4 targets for Central Basin will be needed before Ohio takes on this effort.**

Timeline – Lake Erie Nutrients in the 21st Century



Nutrient management has long been part of the challenge facing Lake Erie. Phosphorus management has led to improvements in the lake, with cyanobacteria largely absent in early 1990's, but then the bloom reemerged in the early 2000's, with a particularly large bloom in 2003 and a consistent presence thereafter.

In 2012, the Great Lakes Water Quality Agreement was signed which set the course for todays phosphorus management with recognition of the new challenges we were facing.

In 2013, Tetra Tech performed an evaluation of permitting options for phosphorus at major POTWs discharging to Lake Erie for U.S. EPA. They evaluated dilution modeling and found limitations so suggested that other interim strategies would be more appropriate, including an optimization strategy that Ohio ultimately pursued.

In 2015, the Annex 4 Targets and Objectives Task Team released its recommendations that shifted the focus to loadings from priority tributaries.

In 2016, Ohio released its Western Basin Collaborative Agreement, this was a precursor to Ohio's Domestic Action plan.

Also in 2016, Ohio published the first version of its Nutrient Mass Balance Study. This study quantified the relative phosphorus contributions of different sources to Lake Erie and other Ohio Waters. The study has continued biennially and updates were released in 2018, 2020, and will be again this year. This serves as a tracking mechanism for Ohio EPA to monitor nutrient loading throughout the state.

In 2018, Ohio released its first Domestic Action Plan, following the data from the Nutrient Mass Balance Study the plan emphasized efforts to manage nonpoint source loads while continuing optimization of major POTWs and other actions to manage wastewater phosphorus.

In 2019, U.S. EPA's Lake Erie Binational Reduction Strategy was published and included Ohio's plans for managing phosphorus from major POTWs.

In 2020, Ohio released an update to the states Domestic Action Plan, this plan identified a strategy to utilize new resources available to Ohio through Governor Dewine's H2Ohio Initiative.

Reasonable Potential

- **During the "real time review" process, one of the suggestions was using reasonable potential to evaluate phosphorus contributions**
- **Ohio has a long history of evaluating phosphorus contributions to Lake Erie with our Nutrient Mass Balance Study**
- **We have consistently weighed the contribution of phosphorus from wastewater as we developed our Domestic Action Plan**

One of the suggestions received from real time review process on Euclid's permit was that Ohio EPA should do a reasonable potential analysis for total phosphorus in our evaluation of the discharge.

Ohio has a long history of evaluating phosphorus contributions to Lake Erie with our nutrient mass balance study

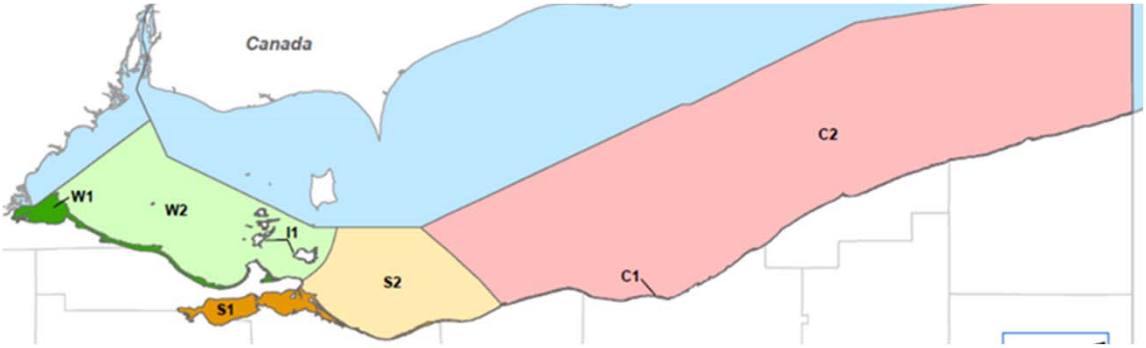
Considering that history, we felt that we had the experience needed to develop a reasonable potential analysis, building on our efforts to weigh the contribution of phosphorus from wastewater in the development of our domestic action plan.

Evaluating Reasonable Potential

Understand	Understand the impairments
Develop	Develop the linkage to total phosphorus
Evaluate	Evaluate the role of phosphorus from Euclid

While we felt that we had the technical basis to develop arguments for a reasonable potential analysis, there were some unique challenges compared to our typical process for toxic pollutants. To address these challenges we wanted to **understand** the impairments, **develop** a linkage to total phosphorus, and finally, **evaluate** the role of phosphorus from Euclid.

Understand the Impairment



- Lake is divided into seven assessment units
- Euclid discharges to narrow **C1 shoreline** unit adjacent to the larger **C2 open waters** unit
- West to East primary flow – Central Basin is downstream of units to the west

Ohio Environmental Protection Agency

To help understand the impairments we need to consider how we evaluate Lake Erie.

Ohio has divided our jurisdictional waters into 7 distinct assessment units.

On the map I want to highlight the two units that are affected by Euclid, the Central Basin Shoreline unit “C1” and the Central Basin Open Waters unit “C2”.

With Lake Erie’s west-to-east flow sources in the western end of the lake contribute to the central basin but not in reverse.

Understand the Impairment

Use Designation	Attaining Use? Central Shoreline	Central Open Water
Aquatic Life Use (*Biological Community/Diversity*)	Not Attaining	TBD
Public Drinking Water Supply (*Algae*)	N/A	Not Attaining
Recreation (*Algae*)	Attaining	Attaining

Legend
TBD = To Be Determine; N/A = Not Applicable

Ohio Environmental Protection Agency

Three beneficial uses for these assessment units have the potential to be influenced by phosphorus.

- Aquatic Life Use, evaluates the diversity of the biological community,
- Public Water Supply Use, evaluates the impact of algal toxins on source water

And,

- Recreation Use, Evaluates the impact of algal toxins on recreation in the lake

Since harmful algal blooms are **not** common or widespread both units are attaining the recreation use for algae.

A nutrient related impairment **is** identified for the aquatic life use in the shoreline and we are developing a new metric that will include the open waters that are not currently assessed.

There is also an impairment identified for the public drinking water supply use in the open waters assessment unit but no intakes are present in the shoreline unit so the use is not applicable.

Understanding how these impairments were identified is important to understanding the

impact of Euclid’s effluent on Lake Erie.

Understand the Impairment (Aquatic Life)

Ohio EPA's Analysis

Impairment is based on shoreline fish species diversity

Impairment is generally linked to broader eutrophication of Lake Erie and trophic disruption from habitat modifications and invasive species

There is no pattern suggesting local disruptions from POTW discharges

Due to allied stressors, environmental gradients that could be translated to nutrient targets are absent when evaluating shoreline IBI scores

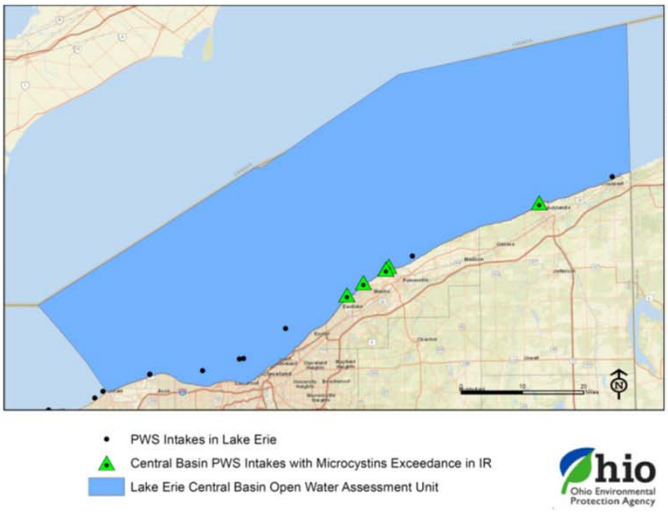
The aquatic life impairment in the shoreline unit is based on electrofishing samples and metrics measuring species diversity.

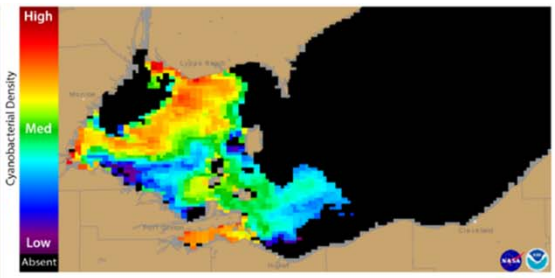
The evaluation noted that species diversity was impacted by broader eutrophication of Lake Erie, with trophic disruptions exacerbated by habitat modifications and invasive species.

In the evaluation there was **not** a pattern that suggested local disruptions from POTW discharges were adding stress.

Attempts to further explain the role of nutrients on the trophic disruption have not shown strong environmental gradients due the influence of the allied stressors. Absent these gradients this metric is not readily translated into a target for loading analysis. The shoreline fish community will benefit from ongoing efforts to manage eutrophication, but invasive species and habitat will weigh heavily on the community's recovery. Absent local impacts it is more appropriate that this continues as a lake wide management strategy rather than a local analysis.

Understand the Impairment – Drinking Water





- Raw water impairments are not widespread
  - 5-of-12 intakes impacted
  - Last exceedances in 2017
  - Tie to western basin blooms
- **Finished water has not been impacted**

Efforts to understand harmful algal blooms in the Central Basin of Lake Erie have proven challenging, not just for Ohio EPA but for a seasoned research community. Harmful algal blooms in the Central Basin are challenging to study because they are less widespread and don't occur with the same predictability as in the western basin. This is pronounced in the impairments identified for drinking water.

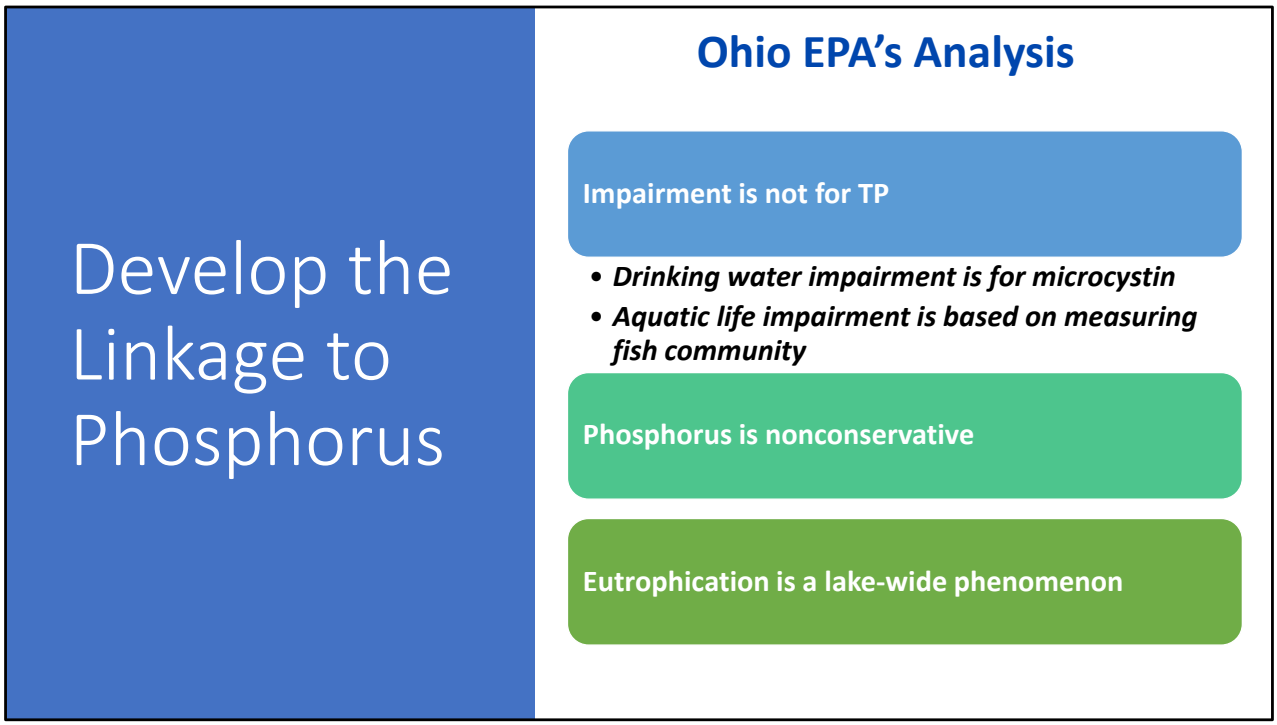
The raw water impairments are not widespread throughout the basin and **only 5-of-12 intakes**, shown in the image on the left, have had raw water threshold exceedances.

Further, those threshold exceedances **have not occurred since 2017**. When they have occurred, the bloom appeared to maintain contact with the western basin, like the one shown in the image on the right.

Harmful algal blooms are not a local phenomenon but one that is dependent on lake wide conditions, especially what happens in the western basin.

A final note is that, as the drinking water impacts from harmful algal blooms emerged, Ohio and its communities have prioritized investments to manage drinking water quality, through testing and treatment, knowing that source water improvements would take time. Through this effort finished water from central basin public water systems has **not** been

impacted by algal toxins.



As we explored the impairments in the central basin, we saw limitations for a 'typical' reasonable potential analysis that we routinely complete for toxic pollutants. In the case of drinking water, the impairment is not for phosphorus, or even algal biomass, but specifically for microcystin, the relationship between phosphorus and microcystin is complex, especially in the central basin of Lake Erie.

Also, once phosphorus is in Lake Erie it is nonconservative. It is sunk into bed sediments and processed into algae, both in the water column and attached to the lake bed.

Ultimately, eutrophication in the central basin is a lake wide phenomenon.

Develop the Linkage to Phosphorus

Ohio EPA's Analysis

Lake Erie is a system

Modeling to a concentration endpoint is impractical

Instead evaluate the impact to loadings to the central basin

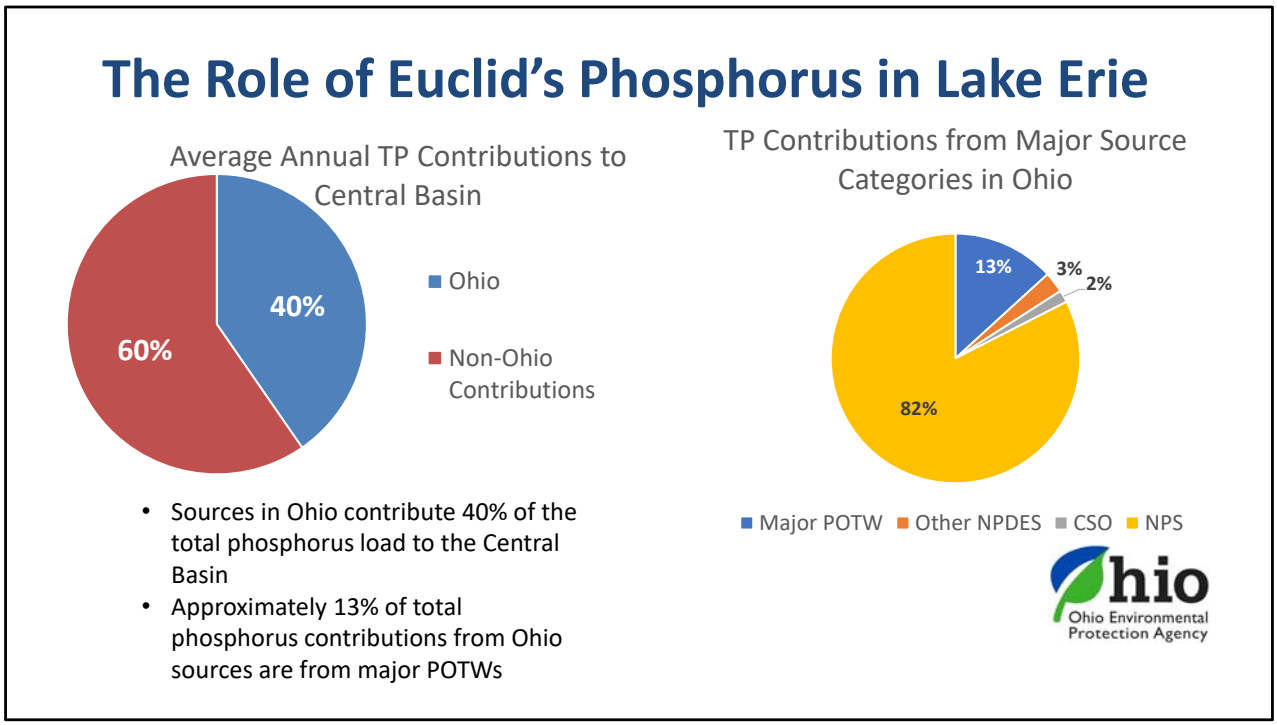
To get past these limitations we need to consider Lake Erie as a 'system'. Lake Erie receives phosphorus loads from point sources and tributaries throughout the lake.

Once in the lake complex interactions affect how these loads influence concentrations.

Following the phosphorus from a POTW and predicting its impact on concentrations is impractical for a permit evaluation.

In part, due to these limitations most recommendations for phosphorus management promote consideration of loads over seasonal or annual periods, rather than dilution modeling.

This is consistent with Ohio's use of the nutrient mass balance study to inform the domestic action plan and other efforts to quantify impacts from different sources. Using this framework provides a practical way to evaluate the impact of Euclid on phosphorus related impairments in the Central Basin of Lake Erie.



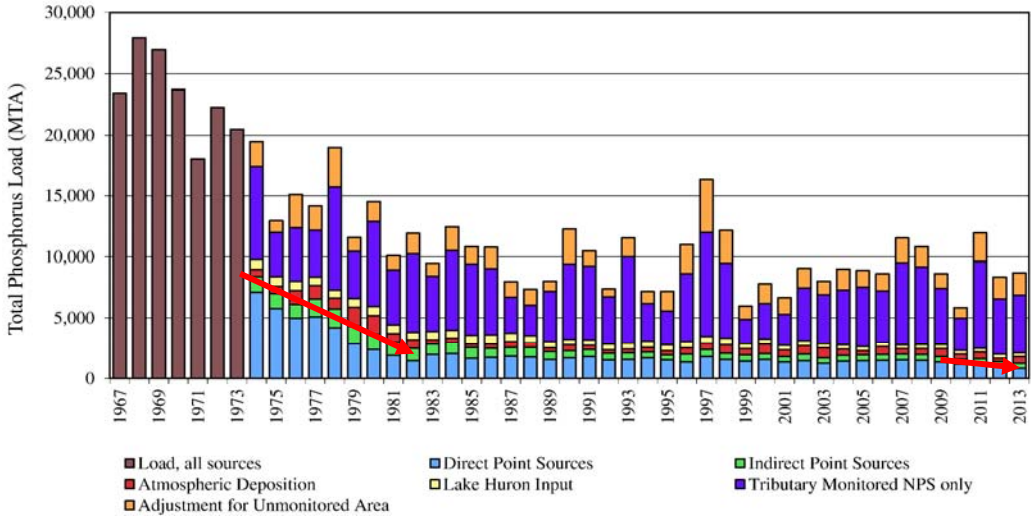
To define the role of Euclid's phosphorus in the central basin we look first to prior efforts that evaluated phosphorus loading.

In total, sources in Ohio contribute approximately **40%** of the total phosphorus to the Central Basin.

And,

Approximately **13%** of Ohio's contribution is from Major POTWs.

The Role of Euclid's Phosphorus in Lake Erie



Adapted from Scavia et al. (2014); J. Great Lakes Res. 40: 226–246.

Today's conditions have not always been this way…

This plot, from a 2014 study led by University of Michigan researchers, shows a large reduction from point sources in the 1970's-80's, when 1.0 mg/L limits were implemented at major POTWs.

The change drove a large shift in both total phosphorus load to the lake and the relative contribution of point sources.

A more subtle trend in point source loads is observed starting in the mid-2000's

The Role of Euclid's Phosphorus in Lake Erie

Ohio EPA's Analysis

Actions:

- Laundry soap and dishwater detergent restrictions
- Optimization requirements for major POTWs
- Financial incentives

Recent average concentrations maintained <0.5 mg/L-TP; better performance than minimum compliance

The more recent trend reflects deliberate actions to manage point source phosphorus. These actions include:

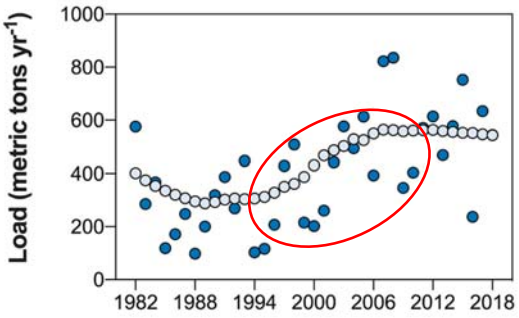
- Modifying laundry soaps and dishwasher detergents to minimize the use of phosphate containing agents
- Optimization requirements for major POTWs

And,

- Financial incentives to promote nutrient management when investing in new infrastructure.

As a result, average effluent phosphorus concentrations in Ohio are <0.5 mg/L – indicating better performance than required for minimum compliance with 1.0 mg/L limits.

The Role of Euclid's Phosphorus in Lake Erie



- Researchers identified a change in the form of phosphorus in nonpoint dominated watersheds as the primary cause
- Re-eutrophication from mid-1990's to mid-2000's
- Loads from major POTWs were stable during this time period

Ohio Environmental Protection Agency

Adapted from Rowland et al. (2021); Ecological Indicators. 125.

This figure was adapted from a study that was published last year. It presents the total dissolved reactive phosphorus load from the Maumee River, as dark blue circles, and uses new methods to smooth out the trend, using light blue circles.

The figure highlights the major change that has driven re-eutrophication of Lake Erie – an increase in dissolved reactive phosphorus loads from nonpoint source dominated watersheds.

From the previous slides we know that major POTW loadings were stable during this time period.

The Role of Euclid's Phosphorus in Lake Erie

Total Load to Central Basin of Lake Erie – 60 Railcars (~7400 MT)

Euclid – Small Dump Truck (~10 MT)

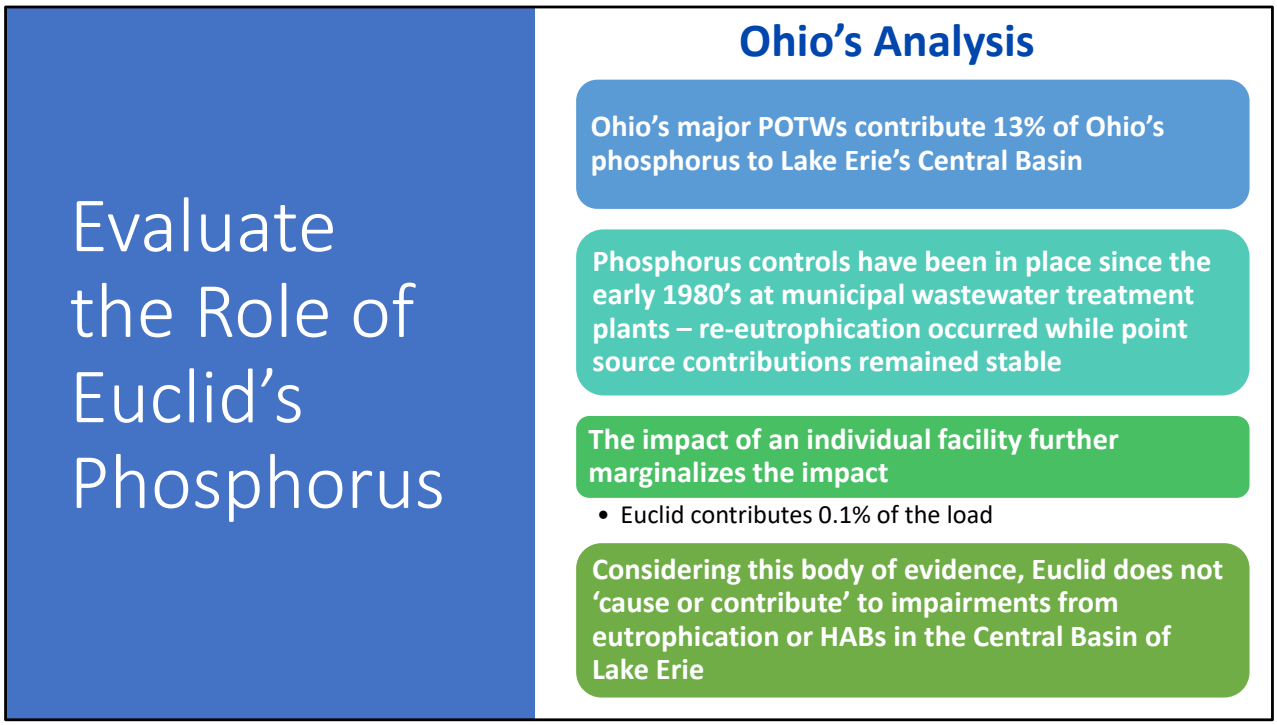
Ohio Environmental Protection Agency

So far we have talked about lake wide contributions and why Lake Erie water quality has changed.

The next step is to think about how Euclid fits into the mass balance.

When considering the contribution of an individual POTW, like Euclid, it is like comparing the ability to move materials using a small dump truck to a train.

The average annual total phosphorus load from Euclid is approximately 10 MT, while all sources contribute and average of 7400 MT to the Central Basin of Lake Erie.



To summarize Ohio's efforts to evaluate reasonable potential we considered the following points as a weight of evidence:

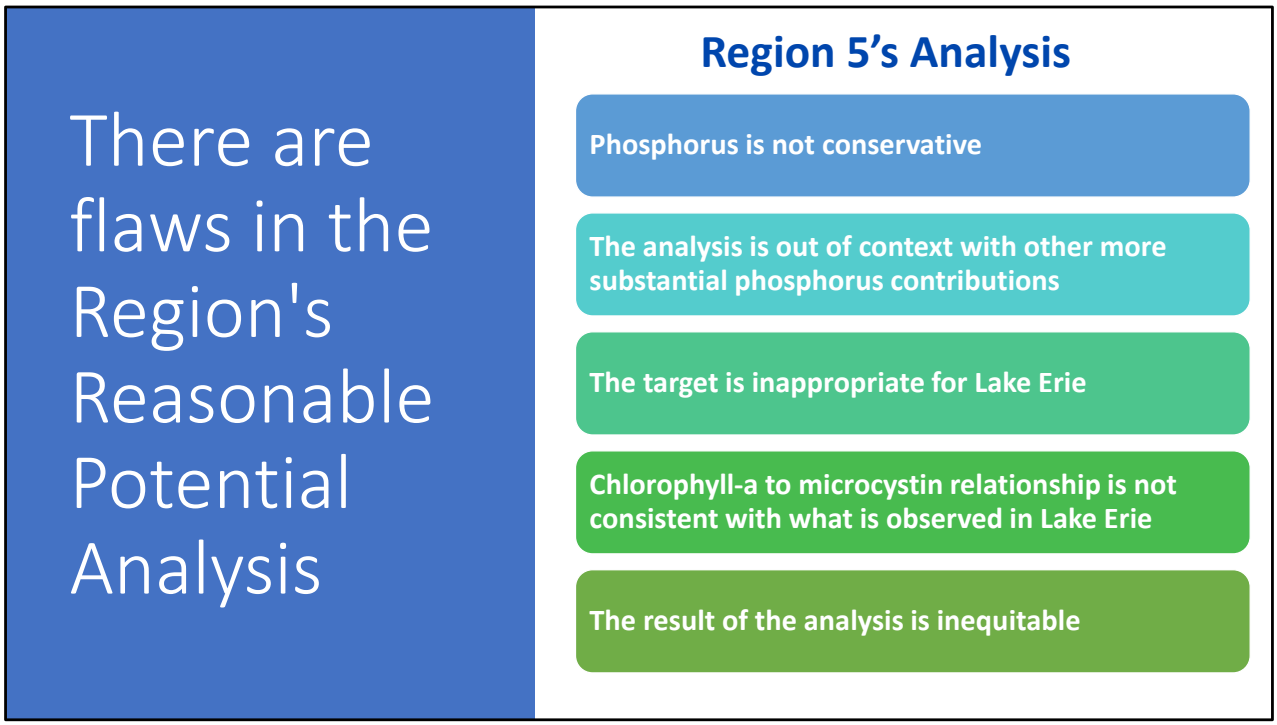
Collectively Ohio's major POTWs contribute 13% of Ohio's phosphorus to the Central Basin.

Phosphorus controls in place since the early-1980's at major POTWs resulted in a major shift in where phosphorus loadings came from in the Lake Erie watershed. Recent emphasis on source management and optimization has resulted in further reductions in actual loads.

While these reductions occurred, Lake Erie water quality has been dynamic. Re-eutrophication has been linked to shifts in the type of phosphorus delivered to the lake from **nonpoint sources.**

When evaluating the influence of Euclid's wastewater treatment plant, the relative contribution is further marginalized. Euclid contributes only fractional component of the load to the central basin at **0.1%**.

Considering this body of evidence, Euclid does not 'cause or contribute' to impairments from eutrophication or HABs in the Central Basin of Lake Erie.



Following the specific objection we considered the Region 5 analysis and have identified flaws that cause concern for using the approach to generate a water quality-based effluent limit.

- Phosphorus in not conservative
- The analysis is out of context of other more substantial phosphorus contributions
- The target used is inappropriate for the Great Lakes
- The relationship between toxins and chlorophyll-a used to derive the phosphorus target is not consistent with what is observed in Lake Erie

And,

- The result of the analysis is inequitable

Phosphorus is not Conservative

Region 5's Analysis

Emphasis should be on the average lake concentration – not the concentration in a small mixing zone

Source concentration does not equal lake concentration

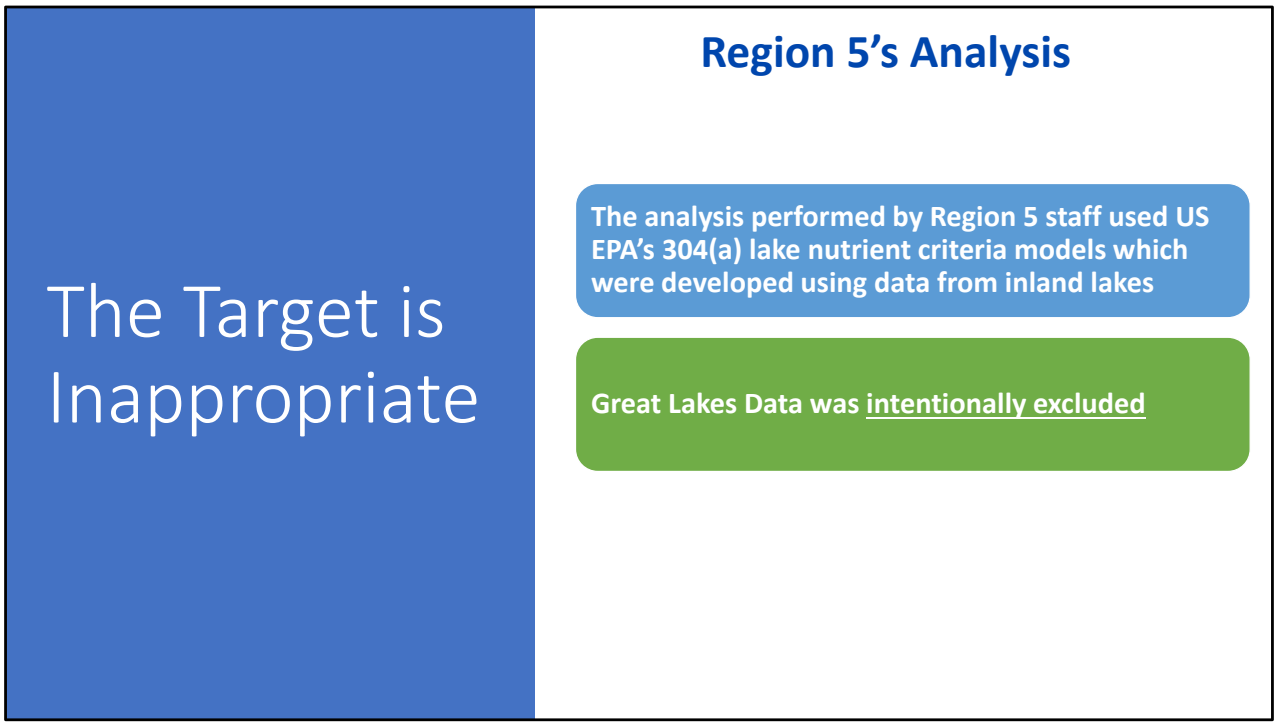
- **Central Basin concentrations <0.01 mg/L**
- **Tributary and wastewater concentrations are much higher than lake phosphorus concentrations**

Treating phosphorus as a conservative pollutant does not consider important dynamics of Lake Erie

- Since eutrophication is a lake wide phenomenon, emphasis should be on the average lake concentration - **not** the concentration in a small mixing zone

Also,

- Source concentration does not equal lake concentration –
  - Central basin phosphorus is typically <0.01 mg/L
  - Source concentrations are much higher. For example, the average concentration of the Cuyahoga river is approximately 0.2 mg/L and wastewater effluent is around 0.5 mg/L



The target used was inappropriate.

The target used in the analysis performed by region 5 staff used U.S. EPA's 304(a) lake nutrient criteria models, which were developed using **inland lake** data from the national lakes assessment.

Great Lakes data was **intentionally** excluded from the development of these models.

The Criteria is Inappropriate

Region 5's Analysis

In a response to comments on the draft criteria models U.S. EPA headquarters stated:

"Relationships estimated in the national criterion models may be informative when interpreting data collected from systems other than represented in the NLA data, and further evaluation of the applicability of these models is warranted."

Using the model for the Great Lakes violates a fundamental tenant of probabilistic modeling – extrapolations should only apply to the populations used to derive the model = inland lakes

Using the model outside of that population requires additional scrutiny

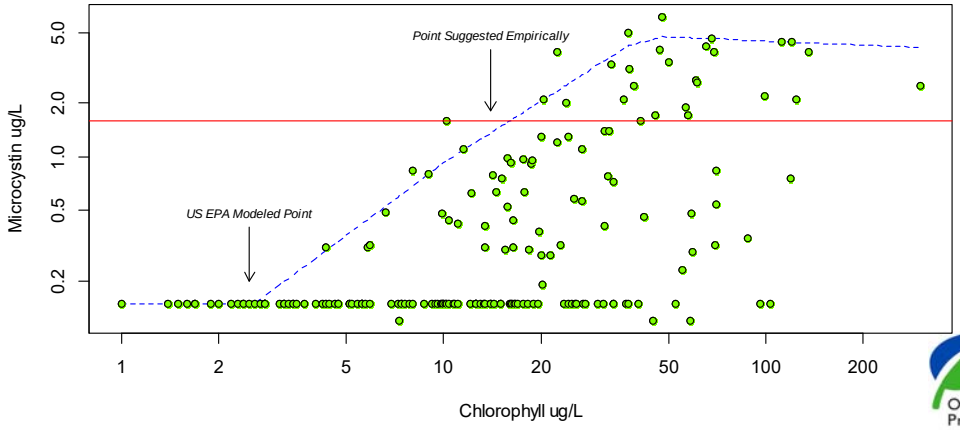
In response to a comment on where the draft criteria could apply U.S. EPA staff from headquarters suggested the national criterion models could be informative when interpreting data collected from other systems.

However, using the inland lake criteria model violates a fundamental tenant of probabilistic modeling – extrapolations should only apply to the populations used to derive the model.

While the response from headquarters suggests evaluation of applicability is warranted, using the model outside of that population requires additional scrutiny.

Region 5's Analysis of Reasonable Potential

Region's target evaluated by Ohio EPA



Ohio Environmental Protection Agency

Microcystin concentrations were never observed above the detection limit at the point US EPA used to derive the TP target.

Ohio EPA collects microcystin and chlorophyll-a data in Lake Erie as part of our monitoring program.

We evaluated the two parameters and indeed, there is a relationship between chlorophyll-a and microcystin.

However, the data suggests a different relationship than the modeled point in the Region's evaluation. This suggests, as might be expected, the Lake Erie algal community is not consistent with the relationship derived from the inland lake model.

In fact, at the modeled point used to develop the target for Region 5's analysis, Ohio EPA has not observed a detection of microcystin in our sampling program.

The Result of the Analysis is Inequitable

Region 5's Analysis

The analysis yields a 99% reduction requirement for Euclid's effluent

It is unreasonable to assume that a 99% reduction from a facility that contributes 0.1% of the load is necessary

This effluent limit is not equitable where nonpoint source loads currently control the trophic status of Lake Erie

Judging the regions analysis in another way questions its equity

The water quality-based effluent limit calculated by the region suggests that a **99%** reduction of phosphorus is needed from Euclid.

It is unreasonable to assume a **99%** reduction from individual facility that contributes **0.1%** of the load to the central basin is necessary.

This effluent limit is not equitable where nonpoint source loads currently control the trophic status of Lake Erie

Now I am going to yield the floor to Tiffani Kavalec to share some further comments from Ohio EPA.

State Specific Strategies

- Phosphorus reduction strategies should be tailored to individual states.
- While the specific objection calls for a phosphorus limit consistent with a concentration of 0.007 mg/L, we know Region 5 has contacted Euclid directly, in an attempt to negotiate a 0.5 mg/L limit for this permit.
- The fact that other Region 5 states have plans in place to impose phosphorus limits to 0.5 mg/L does not mean this strategy is appropriate for Ohio's Lake Erie dischargers – the problem, and sometimes the authority, is different.

Ohio Environmental Protection Agency

Ohio is not Wisconsin

- Wisconsin is one of a few states that has adopted numeric nutrient water quality standards.
- Ohio contends that a more targeted approach to addressing nutrients in Lake Erie is through our Maumee Watershed Nutrient TMDL, with specific wasteload and load allocations for TP.

Ohio Environmental Protection Agency

Ohio is not Illinois

- A 2015 ruling against MWRDGC's permit stated Illinois EPA was not administering the "narrative standard" for offensive conditions.
- As a result of this ruling, negotiations between Illinois EPA, Illinois AWA, and environmental groups were held from 2016-2018.

Ohio Environmental Protection Agency

Ohio is not Illinois

- As a result of this lawsuit, Illinois has developed a program to reduce phosphorus limits of **some facilities** down to 0.5 mg/L, however there are "off-ramps" if the permittee can demonstrate that the limit is not technically or economically feasible.
- For the most part, these facilities in Illinois don't even discharge to the Great Lakes.
- Point sources in Illinois are 48% of their TP loadings statewide.
- In comparison, Ohio's point sources to Lake Erie contribute much less!
  - 13% of Ohio's contribution to the Central Basin
  - 7% of the TP loading in the Maumee Watershed

Ohio Environmental Protection Agency

Ohio is not Michigan

Michigan has 750 Metric Tons (MT) of total phosphorus to remove annually to meet the Annex 4 - 40% reduction target.

2/3rds or 500 MT need to be reduced from the Detroit River alone.

This is a **point source** problem because of wastewater and urban stormwater issues.

Ohio Environmental Protection Agency

Ohio is not Michigan

- Because total phosphorus loading from the Detroit River is predominately coming from point sources, Michigan has recently added a strategy to take another 10-13 of their NPDES permits to 0.5 mg/L.
- Michigan is doing this because they do not believe that it will require a significant amount of large capital expenses, only operational expenses, and will target the remaining significant sources in the Detroit River to help them achieve their 40% reduction goals.
- Michigan's permits expire on a watershed basis so it will take them years to get all of these permits renewed and add new TP limits of 0.5 mg/L, with appropriate compliance schedules.

Ohio Environmental Protection Agency

Ohio is not Michigan

Michigan is working on point sources that discharge to the WLEB, but so is Ohio through our Maumee Nutrient TMDL.

- NOTE: Ohio plans to public notice facility-specific, point source wasteload allocations on June 30th in our draft Preliminary Modeling Results report.

A major difference between Ohio & Michigan is that Ohio's point sources in the Maumee River Watershed only make up 7% of the total phosphorus loading.

Both states, however, are focused on the WLEB to make a significant reduction in TP loadings that migrate to the Central Basin and are attributed to Central Basin impairments.

Ohio is similar to Indiana

- Indiana utilizes a statewide policy established in 2014 which sets a practical State treatment standard of 1.0 mg/L total phosphorus for major POTWs to protect downstream water uses.
- Indiana has found that implementation of their policy has resulted in reductions in phosphorus concentrations appropriate for their point source contributions.

Ohio Environmental Protection Agency

Ohio is similar to Indiana

- Indiana's Domestic Action Plan for nutrient reduction for the Western Lake Erie Basin has action steps developed by an advisory committee with a diverse membership.
- The action steps focus on nonpoint source contributions as the data has shown nonpoint sources in Indiana also have the larger share of phosphorus contributions to the basin.
- Data does not show Indiana's point sources as contributing a significant portion of the Western Lake Erie total phosphorus load.

Ohio Environmental Protection Agency

Ohio is similar to Indiana

- While Indiana's NPDES permittees have phosphorus limits based on the 1.0 mg/L set by the policy, their actual discharge is typically lower, but not consistently at 0.5 mg/L or less.
- Indiana contends that for a diligent operator to ensure compliance with a limit of 0.5 mg/L, costly infrastructure improvements would need to be made at their facilities.
- Indiana is concerned that imposing a 0.5 mg/L limit would result in a large expense with little water quality improvement.
- Indiana believes there are more appropriate ways to invest money that would have more positive impact on Lake Erie water quality.
- Ohio wholeheartedly agrees!

Ohio Environmental Protection Agency

Ohio's Strategy

- Ohio's nutrient permitting strategy looks to:
  - Reasonable potential analysis of our narrative criteria; and/or
  - Existing TMDLs to determine wasteload allocations that lead to lower TP limits; and
  - Plant optimization requirements for Lake Erie basin major POTWs
- Based on discussions with other states in other US EPA Regions, it is unclear that reasonable potential analysis on narrative criteria is being looked at in a consistent manner.

Ohio's Strategy - TMDLs

- In 40 CFR 130.7 and the Clean Water Act:
  - Within the 303(d) Impaired Waters list – states are given authority to set TMDL priorities recognizing not everything can be done at once.
  - The Integrated Reports are approved by US EPA biennially.

Ohio Environmental Protection Agency

Ohio's Strategy – Maumee Nutrient TMDL

- In our 2020 Integrated Report, Ohio prioritized the Maumee Watershed Nutrient TMDL and committed to completing it within three years.
  - Approved by Region 5
  - Includes 4,000,000 acres of agricultural land
- Ohio is on target to submit the final TMDL to US EPA for approval by June 30, 2023.
- This commitment should not be ignored as it will be the single, greatest effort to fix most of Ohio's TP contributions to harmful algal blooms in Lake Erie.
- A Central Basin Lake Erie TMDL is not Ohio's highest priority at this time, but we will continue to work with Annex 4 on appropriate TP loading targets and proceed with prioritization of a TMDL, if the state of the science determines we should.

Ohio's Strategy – Maumee Nutrient TMDL

- Ohio does not plan to impose unattainable TP limits on our point sources through the Maumee Nutrient TMDL.
- Doing so would simply force the local governments and rate payers to take on the cost burden to in-turn, pay for nonpoint source reductions on their behalf.
- Through Ohio's H2Ohio Program and other state funded efforts, the state of Ohio is already paying the nonpoint source parties to take actions to reduce phosphorus loadings and do not need to put the local governments in the middle of these transactions or force our rate payers to bear this burden.

Summary

- We have explained our reasonable potential analysis process to Region 5 countless times and have many records asking for *"the specific, technical reasons why US EPA believes the reasonable potential analysis that was conducted [for Euclid] is not appropriate"*, with no response to date.
- Per the reasonable potential rule, US EPA is supposed to afford the permitting authority with a certain degree of latitude and flexibility in its implementation.

Summary

- In this specific objection, US EPA contends that Ohio is (out of line with) the Clean Water Act because we did not follow the ambient numeric nutrient water quality criteria recommendations for lakes and reservoirs, which we deem wholly inappropriate for use in any of the Great Lakes' ecosystems.

- Even if we did agree that this criteria was applicable, Ohio contends that it would only be defensible, once adopted into our own Water Quality Standards through our triennial review process.

Ohio Environmental Protection Agency

Summary

- Ohio's NPDES universe includes **292 majors** & **2,920 minors**
- In FFY 2021, US EPA identified these **nine** permits for "real time review":

Permit number	Name	Type	Expiration Date
OH0020541	City of Nelsonville	POTW	Modification 10/27/2020
OH0064009	Summit County Environmental Services	POTW	10/31/2020
OH0052922	City of Bucyrus	POTW	11/30/2020
OH0028240	Zanesville City of	POTW	1/31/2021
OH0031062	City of Euclid	POTW	2/28/2021
OH0028118	Willard, City of	POTW	2/28/2021
OH0049999	Eastern Ohio Regional Wastewater Auth	POTW	6/30/2021
OH0027740	City of Toledo	POTW	8/31/2021
OH0003891	Aleris Rolled Products	NON-POTW	1/31/2021

- **US EPA's real time review process should NOT be the avenue to set regional, nutrient permitting strategies – illegal rulemaking!**

Summary

CWA's limited authority over nonpoint source pollution is not an excuse or reason to thrust the pollution reduction on point sources where science and regulations do not support it.

US EPA's actions are being taken with disregard to a state's nutrient reduction planning framework and in disregard to a state's TMDL prioritization authority.

We do not concede that a 0.5 mg/L limit of TP is an appropriate, negotiated solution based on the myriad of technical and legal positions we have presented today. Further, Ohio finds it inappropriate for Region 5 to attempt to negotiate permit limits directly with the City of Euclid as it undermines our role as a federally delegated program.

Closing

In closing, I want to make it crystal clear that Ohio has prioritized nutrient reduction in Lake Erie and is moving at a record pace to implement TP reductions where the science tells us it will make the biggest impact.

Ohio is very concerned about US EPA's lack of consistency on total phosphorus permitting requirements across its regions.

This has garnered national attention and Ohio is also very concerned about the precedent Region 5 is attempting to set with the Euclid permit, as are other states.

Closing

Expecting a 99% reduction from a facility that contributes 0.1% of the TP load is inequitable and indefensible.

If US EPA's true policy objective is 0.5 mg/L, then US EPA's own reasonable potential is arbitrary and capricious.

This specific objection puts Ohio's delegation credibility into question, and we ask that this matter be deliberated with US EPA HQ - Office of Water, before a final decision is rendered.

Lastly, again, Ohio respectfully requests US EPA to withdrawal this specific objection.

Ohio's Testimony Concluded

Ohio Environmental Protection Agency

This concludes Ohio's testimony and I yield the floor back to Administrator Shore.